



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,938	12/11/2003	Tieyu Zheng	P17133	7310
21186	7590	05/09/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			WILLIAMS, DON J	
			ART UNIT	PAPER NUMBER
			2878	
DATE MAILED: 05/09/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/732,938

Applicant(s)

ZHENG ET AL.

Examiner

Don Williams

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

Applicant's arguments with respect to claim 1-11 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, it is unclear how the first TO can and the second TO can are connected to each other. It appears that they are separate devices. For examining purpose, the first TO can and the second TO can will be treated as individual devices. Appropriate correction is required.

Claims 2-5 are rejected due to dependency.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al in view of Narayan et al (6,860,652).

As to claim 1, Ito et al disclose (see fig. 16) an optical transceiver module (M3) that is functionally equivalent to an optical transponder in that it includes a first TO can (M1) having a light- receiving device (31), a second TO can (M2) having an emitting device (231), a lid (93), a base (91), (see figure 6, column 7, lines 57-67, column 11, lines 1-15). Ito et al fail to explicitly teach a first insulated base and a second insulated base. Narayan et al disclose an insulating base (110) and a metal cover (150) hermetically sealed to the upper surface (120) of the insulating base (110), (see column 6, lines 22-32). It would have been obvious for one ordinary skill in the art to modify Ito et al to include a first and second insulating base (110) and a first and second hermetically sealed metal cover (150) as disclosed by Narayan et al corresponding to a first TO can and a Second TO can to improve the thermal conductivity for directing dissipated heat away from the optoelectronic assembly allowing the system to operate at an optimal level.

As to claim 2, the modified Ito et al disclose that the insulating base (110) is coupled to a heat sink, (see Narayan et al, column 2, lines 5-15). The modified Ito et fail to explicitly teach a second insulating base. However, It would have been obvious for one ordinary skill in the art to further modify Ito et al to include a second insulating base coupled to a heat sink to improve dissipation of heat away from the optoelectronic devices.

As to claim 3, the modified Ito et al disclose that the conducting surface of the first insulating base is in contact at the mating of the heat sink device, (see Narayan et al, column 4, lines 5-20). The modified Ito et al fail to explicitly teach the mating of a second insulating device to a heat sink. It would have been obvious for one ordinary skill in the art to mate the first and second insulating bases to the heat sink of the metal housing in order to provide sufficient thermal contact resulting in improved heat dissipation efficiency throughout the system.

As to claim 4, the modified Ito et al disclose that the insulating base has an upper surface (120) and a lower surface (130), both comprise of flat surfaces, (see Narayan et al, figure 1). It would have been obvious for one ordinary skill in the art to use the upper flat surfaces of the first and second insulating bases to mount the electronic devices of the optical transponder.

As to claim 5, the modified Ito et al fail to disclose that the optical transponder has an impedance of 50 ohms. Narayan et al disclose the lower thermal impedance, (see column 2, lines 46-49). It would have been obvious for one ordinary skill in the art to select an impedance of 50 ohms to improve and control the heat dissipation from the system.

Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epitiaux et al in view of Narayan et al (6,860,652).

As to claim 6, Epitiaux et al disclose an optical transponder (600) having an optical receiver (660) housed in a package, which can be considered a first TO can; an

Art Unit: 2878

optical transmitter (610) housed in a second package which can be considered a second TO can; and a plurality of coupling leads, (see figure 8, paragraph [0054]. Epitiaux et al fail to explicitly disclose insulating bases having a plurality of electrical leads running through the interior of the insulating base of the optical receiver and the optical transmitter. Narayan et al disclose an insulating base (110) and electrical leads (170), (see figure 2, column 5, lines 39-47). It would have been obvious for one ordinary skill in the art to modify Epitiaux et al to include an insulating base with electrical leads running through the insulating base interior as taught by Narayan et al to improve the optical receiver ability to detect optical signals at a rate of 10 Gb/s and to improve the optical transmitter ability to transmit optical signals at a rate of 10Gb/s.

As to claim 7, the modified Epitiaux et al disclose that the insulating bases are coupled to a heat sink, (see Narayan et al, column 4, lines 5-15).

As to claim 8, the modified Epitiaux et al fail to explicitly disclose that the optical transponder housing is the heat sink. Narayan et al disclose that the header that is functionally equivalent to a housing, is in intimate contact with the heat sink, (see column 2, lines 46-52). It would have been obvious for one ordinary skill in the art to further modify Epitiaux et al to intimately connect the housing to a heat sink to improve thermal characteristics which results in increased heat dissipation from the optical components located inside the TO cans that are hermetically sealed.

As to claim 9, the modified Epitiaux et al fail to disclose that the first and second TO cans have an impedance of 50 ohms. Narayan et al disclose the lower thermal impedance, (see column 2, lines 46-49). It would have been obvious for one ordinary

skill in the art to select an impedance of 50 ohms to improve and control the heat dissipation from the system.

As to claim 10, Epitoux et al disclose an optical transponder (600) having an optical receiver (660) housed in a package, which can be considered a first TO can; an optical transmitter (610) housed in a second package which can be considered a second TO can, (see figure 8, paragraph [0054]. Epitoux et al fail to explicitly disclose insulating bases having a first surface and an opposite surface. Narayan et al disclose an insulating base (110) having an upper surface (120) and a lower surface (130) of the insulating base, (see figure 1, column 3, lines 50-55). It would have been obvious for one ordinary skill in the art to modify Epitoux et al to include insulating bases having an upper surface used for attaching the optical components and a lower surface used for the electrical leads running through the insulating base interior as taught by Narayan et al to improve the optical receiver ability to detect optical signals at a rate of 10 Gb/s and to improve the optical transmitter ability to transmit optical signals at a rate of 10Gb/s.

As to claim 11, the modified Epitoux et al fail to disclose that the first and second TO cans have an impedance of 50 ohms. Narayan et al disclose the lower thermal impedance, (see column 2, lines 46-49). It would have been obvious for one ordinary skill in the art to select an impedance of 50 ohms to improve and control the heat dissipation from the system.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Don Williams whose telephone number is 571-272-8538. The examiner can normally be reached on 8:30a.m. to 5:30a.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800